UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

SEP 29 2014

REPLY TO THE ATTENTION OF:

**CERTIFIED MAIL**
**RETURN RECEIPT REQUESTED**

Brian Wulf
Director, Environmental
Wood River Refinery
900 South Central Avenue
Roxana, Illinois 62084

Dear Mr. Wulf:

The U.S. Environmental Protection Agency is issuing the enclosed Finding of Violation (FOV) to WRB Refining LP's Wood River refinery at 900 South Central Avenue, Roxana, Illinois (you or the refinery). EPA has determined that the refinery is in violation of the National Emission Standard for Benzene Waste Operations. Violations of the National Emission Standard for Benzene Waste Operations constitute violations of Section 112 of the Act.

Section 113 of the Clean Air Act gives us several enforcement options. These options include issuing an administrative compliance order, issuing an administrative penalty order and bringing a judicial civil or criminal action.

We are offering you an opportunity to confer with us about the violations alleged in the FOV. The conference will give you an opportunity to present information on the specific findings of violation, any efforts you have taken to comply and the steps you will take to prevent future violations. In addition, in order to make the conference more productive, we encourage you to submit to us information responsive to the FOV prior to the conference date.

Please plan for the refinery's technical and management personnel to attend the conference to discuss compliance measures and commitments. You may have an attorney represent you at this conference.

The EPA contacts in this matter are Virginia Galinsky, Environmental Engineer, and Mary McAuliffe, Associate Regional Counsel. You may call them at (312) 353-2089 and (312) 886-6237, respectively, if you wish to request a conference. You should make the request for a conference within 10 calendar days following receipt of this letter. We should hold any conference within 30 calendar days following receipt of this letter.

Sincerely,

George T. Czerniak
Director
Air and Radiation Division

cc: Eric Jones, Illinois Environmental Protection Agency
Donna H. Carvalho, Phillips 66

Enclosure

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**
**REGION 5**

| | | |
|---|---|---|
| **IN THE MATTER OF:** | ) | |
| | ) | |
| **WRB Refining, LP** | ) | **FINDING OF VIOLATION** |
| **Wood River Refinery** | ) | |
| **Roxana, Illinois** | ) | |
| | ) | **EPA-5-14-IL-25** |
| Proceedings Pursuant to | ) | |
| the Clean Air Act | ) | |
| 42 U.S.C.§ § 7401 *et seq.* | ) | |

## FINDING OF VIOLATION

WRB Refining LP owns and operates a petroleum refinery at 900 South Central Avenue, Roxana, Illinois, known as the Wood River Refinery (facility or refinery). WRB Refining LP is a limited partnership jointly owned by Phillips 66 and Cenovus Energy Inc. Phillips 66 is the operator and managing partner of WRB Refining LP. Operations at the refinery include a wastewater treatment plant and process sewers that contain benzene waste.

The U.S. Environmental Protection Agency is sending this Finding of Violation (FOV or Notice) to notify the refinery that we have found violations of the National Emission Standard for Benzene Waste Operations.

### Clean Air Act

1. Section 112(b) of the Act, 42 U.S.C. § 7412(b) lists 188 Hazardous Air Pollutants (HAPs) that cause adverse health or environmental effects.

2. Section 112(d) of the Act, 42 U.S.C. § 7412(d), requires EPA to promulgate regulations establishing emissions standards for each category or subcategory of major and area sources of HAPs that are listed for regulation pursuant to Section 112(c), 42 U.S.C. § 7412(c).

### NESHAP General Provisions

3. 40 C.F.R. § 61.05(c) requires that "[n]inety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the Act."

4. 40 C.F.R. § 61.12(a) provides that "[c]ompliance with numerical emission limits shall be determined in accordance with emission tests established in § 61.13 or as otherwise specified in an individual subpart."

5. 40 C.F.R. § 61.12(b) provides that "[c]ompliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart."

6. 40 C.F.R. § 61.12(c) requires that "[t]he owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source."

**Benzene Waste NESHAP**

7. Under Section 112(d) of the Act, 42 U.S.C. § 7412(d), EPA promulgated the National Emission Standard for Benzene Waste Operations (Benzene Waste NESHAP) on March 7, 1990. See 55 Fed. Reg. 8346.

8. The Benzene Waste NESHAP, as amended, became effective on January 7, 1993, and is codified at 40 C.F.R. Part 61, Subpart FF

9. 40 C.F.R. § 61.340(a) provides that "[t]he provisions of this subpart apply to owners and operators of chemical manufacturing plants, coke by-product recovery plants, and petroleum refineries."

10. 40 C.F.R. § 61.341 defines "cover" as "a device or system which is placed on or over a waste placed in a waste management unit so that the entire waste surface area is enclosed and sealed to minimize air emissions. A cover may have openings necessary for operation, inspection, and maintenance of the waste management unit such as access hatches, sampling ports, and gauge wells provided that each opening is closed and sealed when not in use. Example of covers include a fixed roof installed on a tank, a lid installed on a container, and an air-supported enclosure installed over a waste management unit."

11. 40 C.F.R. § 61.341 defines "fixed roof" as "a cover that is mounted on a waste management unit in a stationary manner and that does not move with fluctuations in liquid level."

12. 40 C.F.R. § 61.341 defines "individual drain system" as "the system used to convey waste from a process unit, product storage tank, or waste management unit to a waste management unit. The term includes all process drains and common junction boxes, together with their associated sewer lines and other junction boxes, down to the receiving waste management unit."

13. 40 C.F.R. § 61.341 defines "no detectable emissions" as "less than 500 parts per million by volume (ppmv) above background levels, as measured by a detection instrument reading in accordance with the procedures specified in § 61.355(h) of this subpart."

14. 40 C.F.R. § 61.341 defines "oil-water separator" as "a waste management unit, generally a tank or surface impoundment, used to separate oil from water. An oil-water

separator consists of not only the separation unit but also the forebay and other separator basins, skimmers, weirs, grit chambers, sludge hoppers, and bar screens that are located directly after the individual drain system and prior to additional treatment units such as an air flotation unit, clarifier, or biological treatment unit. Examples of an oil-water separator include an API separator, parallel-plate interceptor, and corrugated-plate interceptor with the associated ancillary equipment."

15. 40 C.F.R. § 61.341 defines "tank" as "a stationary waste management unit that is designed to contain an accumulation of waste and is constructed primarily of nonearthen materials (e.g., wood, concrete, steel, plastic) which provide structural support."

16. 40 C.F.R. § 61.341 defines "waste management unit" as "a piece of equipment, structure, or transport mechanism used in handling, storage, treatment, or disposal of waste. Examples of a waste management unit include a tank, surface impoundment, container, oil-water separator, individual drain system. . ."

17. 40 C.F.R. § 61.342(a) provides that "...[t]he total annual benzene quantity from facility waste is the sum of the annual benzene quantity for each waste stream at the facility that has a flow-weighted annual average water content greater than 10 percent or that is mixed with water, or other wastes, at any time and the mixture has an annual average water content greater than 10 percent. The benzene quantity in a waste stream is to be counted only once without multiple counting if other waste streams are mixed with or generated from the original waste stream..."

18. 40 C.F.R. § 61.342(a)(3) provides that "[b]enzene in wastes generated by remediation activities conducted at the facility, such as the excavation of contaminated soil, pumping and treatment of groundwater, and the recovery of product from soil or groundwater, are not included in the calculation of total annual benzene quantity for that facility. If the facility's total annual benzene quantity is 10 Mg/yr (11 ton/yr) or more, wastes generated by remediation activities are subject to the requirements of paragraphs (c) through (h) of this section. If the facility is managing remediation waste generated offsite, the benzene in this waste shall be included in the calculation of total annual benzene quantity in facility waste, if the waste streams have an annual average water content greater than 10 percent, or if they are mixed with water or other wastes at any time and the mixture has an annual average water content greater than 10 percent."

19. 40 C.F.R. § 61.342(c) requires that "[e]ach owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section shall manage and treat the facility waste as follows: (1) For each waste stream that contains benzene, including (but not limited to) organic waste streams that contain less than 10 percent water and aqueous waste streams, even if the wastes are not discharged to an individual drain system, the owner or operator shall: (i) Remove or destroy the benzene contained in the waste using a treatment process or wastewater treatment system that complies with the standards specified in § 61.348 of this subpart. (ii) Comply with the standards specified in §§ 61.343 through 61.347 of this subpart for each waste management unit that receives or manages the waste stream prior to and during treatment of the waste stream in accordance with paragraph (c)(1)(i) of this section. (iii) Each

waste management unit used to manage or treat waste streams that will be recycled to a process shall comply with the standards specified in §§ 61.343 through 61.347. Once the waste stream is recycled to a process, including to a tank used for the storage of production process feed, product, or product intermediates, unless this tank is used primarily for the storage of wastes, the material is no longer subject to paragraph (c) of this section."

20. 40 C.F.R. § 61.342(e) requires that "[a]s an alternative to the requirements specified in paragraphs (c) and (d) of this section, an owner or operator of a facility at which the total annual benzene quantity from facility waste is equal to or greater than 10 Mg/yr (11 ton/yr) as determined in paragraph (a) of this section may elect to manage and treat the facility waste as follows:

> (1) The owner or operator shall manage and treat facility waste with a flow-weighted annual average water content of less than 10 percent in accordance with the requirements of paragraph (c)(1) of this section; and
>
> (2) The owner or operator shall manage and treat facility waste (including remediation and process unit turnaround waste) with a flow-weighted annual average water content of 10 percent or greater, on a volume basis as total water, and each waste stream that is mixed with water or wastes at any time such that the resulting mixture has an annual water content greater than 10 percent, in accordance with the following:
>
> > (i) The benzene quantity for the wastes described in paragraph (e)(2) of this section must be equal to or less than 6.0 Mg/yr (6.6 ton/yr), as determined in § 61.355(k). Wastes as described in paragraph (e)(2) of this section that are transferred offsite shall be included in the determination of benzene quantity as provided in § 61.355(k). The provisions of paragraph (f) of this section shall not apply to any owner or operator who elects to comply with the provisions of paragraph (e) of this section.
> >
> > (ii) The determination of benzene quantity for each waste stream defined in paragraph (e)(2) of this section shall be made in accordance with § 61.355(k)."

21. 40 C.F.R. § 61.343(a) requires that "[e]xcept as provided in paragraph (b) of this section and in § 61.351, the owner or operator must meet the standards in paragraph (a)(1) or (2) of this section for each tank in which the waste stream is placed in accordance with § 61.342 (c)(1)(ii). The standards in this section apply to the treatment and storage of the waste stream in a tank, including dewatering."

22. 40 C.F.R. § 61.343(a)(1) requires that "[t]he owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the tank to a control device."

23. 40 C.F.R. § 61.343(a)(1)(i) requires that "[t]he fixed-roof shall meet the following requirements: (A) The cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart."

24. 40 C.F.R. § 61.346(a) requires that "[e]xcept as provided in paragraph (b) of this section, the owner or operator shall meet the following standards for each individual drain system in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart: (1) The owner or operator shall install, operate, and maintain on each drain system opening a cover and closed-vent system that routes all organic vapors vented from the drain system to a control device."

25. 40 C.F.R. § 61.346(a)(1)(i) requires that "[t]he cover shall meet the following requirements: (A) The cover and all openings (e.g., access hatches, sampling ports) shall be designed to operate with no detactable [*sic*] emissions as indicated by an instrument reading of less than 500 ppmv above background, initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart. (B) Each opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the drain system except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair."

26. 40 C.F.R. § 61.347(a) requires that "[e]xcept as provided in § 61.352 of this subpart, the owner or operator shall meet the following standards for each oil-water separator in which waste is placed in accordance with § 61.342(c)(1)(ii) of this subpart: (1) The owner or operator shall install, operate, and maintain a fixed-roof and closed-vent system that routes all organic vapors vented from the oil-water separator to a control device."

27. 40 C.F.R. § 61.347(a)(1)(i)(A) requires that the fixed roof shall meet the following requirements: "[t]he cover and all openings (e.g., access hatches, sampling ports, and gauge wells) shall be designed to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as determined initially and thereafter at least once per year by the methods specified in § 61.355(h) of this subpart."

28. 40 C.F.R. § 61.347(a)(1)(i)(B) requires that "[e]ach opening shall be maintained in a closed, sealed position (e.g., covered by a lid that is gasketed and latched) at all times that waste is in the oil-water separator except when it is necessary to use the opening for waste sampling or removal, or for equipment inspection, maintenance, or repair."

29. 40 C.F.R. § 61.348(a)(1) requires that the owner or operator shall treat the waste stream by designing, installing, operating, and maintaining a treatment process that either "(i) Removes benzene from the waste stream to a level less than 10 parts per million by weight (ppmw) on a flow-weighted annual average basis, (ii) Removes benzene from the waste stream by 99 percent or more on a mass basis, or (iii) Destroys benzene in the waste stream by incinerating the waste in a combustion unit that achieves a destruction efficiency of 99 percent or greater for benzene."

30. 40 C.F.R. § 61.348(a)(2) requires that "[e]ach treatment process complying with paragraphs (a)(1)(i) or (a)(1)(ii) of this section shall be designed and operated in accordance with the appropriate waste management unit standards specified in §§ 61.343 through 61.347 of this subpart. For example, if a treatment process is a tank, then the owner or operator shall comply with § 61.343 of this subpart."

31. 40 C.F.R. § 61.348(e) requires that "[e]xcept as specified in paragraph (e)(3) of this section, if the treatment process or wastewater treatment system unit has any openings (e.g., access doors, hatches, etc.), all such openings shall be sealed (e.g., gasketed, latched, etc.) and kept closed at all times when waste is being treated, except during inspection and maintenance."

32. 40 C.F.R. § 61.351(a) provides that "[a]s an alternative to the standards for tanks specified in § 61.343 of this subpart, an owner or operator may elect to comply with one of the following:... (2) An external floating roof meeting the requirements of 40 CFR 60.112b (a)(2)..." (See paragraph 35, below.)

33. 40 C.F.R. § 61.355(h) requires that "[a]n owner or operator shall test equipment for compliance with no detectable emissions as required in §§ 61.343 through 61.347, and §61.349 of this subpart in accordance with the following requirements: (1) Monitoring shall comply with Method 21 from appendix A of 40 CFR part 60...(6) The instrument probe shall be traversed around all potential leak interfaces as close as possible to the interface as described in Method 21..."

34. 40 C.F.R. § 61.355(k) requires that "[a]n owner or operator shall determine the benzene quantity for the purposes of the calculation required by § 61.342(e)(2) by the following procedure: (1) For each waste stream that is not controlled for air emissions in accordance with § 61.343. 61.344, 61.345, 61.346, 61.347, or 61.348(a), as applicable to the waste management unit that manages the waste, the benzene quantity shall be determined as specified in paragraph (a) of this section, except that paragraph (b)(4) of this section shall not apply, i.e., the waste quantity for process unit turnaround waste is not annualized but shall be included in the determination of benzene quantity for the year in which the waste is generated for the purposes of the calculation required by § 61.342(e)(2)."

**NSPS Subpart Kb**

35. 40 C.F.R. § 60.112b(a)(2)(ii) requires that an on an external floating roof tank, "...[a]utomatic bleeder vents are to be closed at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports...Automatic bleeder vents and rim space vents are to be gasketed..."

**Factual Background**

36. WRB Refining LP (WRB) owns and operates the refinery at 900 South Central Avenue, Roxana, Illinois. WRB is a limited partnership jointly owned by Phillips 66 and Cenovus Energy Inc. Phillips 66 is a Delaware corporation located in Houston, Texas. Cenovus Energy Inc. is a Canadian corporation located in Calgary, Canada. Phillips 66 is the operator and managing partner of WRB. The refinery includes several units that the refinery has identified as being subject to the Benzene Waste NESHAP, including the Lower Lift Station, Upper Lift Station, Tank B121, Tank A149, dissolved nitrogen flotation tanks (DNFs) and corrugated plate interceptors (CPIs). The refinery has also identified Tank A149 as subject to NSPS Subpart Kb.

37. The refinery generates more than 10 megagrams per year (Mg/yr) of total annual benzene. The refinery has chosen to comply with the compliance option outlined at 40 C.F.R. § 61.342(e).

38. The Lower Lift Station is an "individual drain system" as defined in the Benzene Waste NESHAP.

39. The Upper Lift Station 1st and 2nd stage neutralization basins are tanks as defined in the Benzene Waste NESHAP.

40. Each CPI is an "oil-water separator" as defined in the Benzene Waste NESHAP.

41. Tank A149, Tank B121 and the DNFs are each a "tank" as defined in the Benzene Waste NESHAP.

42. From June 16 – 19, 2014, EPA conducted an on-site inspection at the refinery. During this inspection, EPA used a FLIR camera as a screening tool to identify leaks. When EPA observed a leak, the refinery's Benzene Waste NESHAP contractor, Guardian, performed Method 21 on the identified area to determine whether the component was leaking above 500 ppmv.

43. During the inspection, EPA and Guardian identified the following covers and openings in covers that had instrument readings over 500 ppmv (components are identified using the refinery's Benzene Waste NESHAP component IDs):

| **Component ID** | **Component Description** | **Unit** | **Date of Inspection** | **Method 21 Reading (ppmv)** |
|---|---|---|---|---|
| a. B10055 | East wooden cover | Lower Lift Station | 6/17/2014 | 266,119 |
| b. B10040 | West wooden cover | Lower Lift Station | 6/17/2014 | 266,119 |
| c. B10042 | West wooden cover | Lower Lift Station | 6/17/2014 | 39,151 |
| d. B10288 | Hatch | Upper Lift Station – 1st Stage Neutral. Basin | 6/17/2014 | 4,208 |
| e. B10319 | Hatch | Upper Lift Station – 2nd Stage Neutral. Basin | 6/17/2014 | 21,709 |
| f. B10393 | Hatch | CPI #51 | 6/17/2014 | 18,619 |
| g. B10394 | Hatch | CPI #51 | 6/17/2014 | 611 |
| h. B10477 | Hatch | CPI #53 | 6/17/2014 | 1,082 |
| i. B10478 | Hatch | CPI #53 | 6/17/2014 | 21,345 |
| j. B13963 | Pinhole opening | CPI #56 | 6/17/2014 | 35,000 |
| k. B10416 | Cover | CPI #50 | 6/17/2014 | 3,107 |
| l. B10353 | Hatch | CPI #48 | 6/17/2014 | 507 |
| m. B10904 | Conservation Vent | Tank B121 | 6/19/2014 | 4,371 |
| n. B10478 | Hatch | CPI #53 | 6/19/2014 | 2,301 |

44. On June 17, 2014, EPA observed Tank A149 using the FLIR camera. The camera showed hydrocarbon emissions from each of the three bleeder vents located on the roof of Tank A149.

45. The refinery's July 9, 2014 follow-up inspection identified that each of the 3 bleeder vents had deteriorated gaskets.

46. On June 19, 2014, EPA observed DNF #1 using the FLIR camera. The camera showed hydrocarbon emissions from 17 seams on the roof of DNF #1. None of these seams could be monitored that day using Method 21 because these seams were located too far from the walkway on top of DNF #1.

47. During EPA's inspection, DNF #2 was down for unplanned maintenance, and could not be monitored. A refinery representative informed EPA that the refinery does not monitor the seams on the roof of DNF #1 or #2 as part of its Method 21 monitoring for the Benzene Waste NESHAP.

48. Under 40 C.F.R. § 61.355(k), because the Lower Lift Station (individual drain system), Upper Lift Station (tank), each CPI, each DNF (tank), Tank A149 and Tank B121 (tank) were not controlled for air emissions in accordance with §§ 61.343, 61.346 and 61.347, as described in Paragraphs 43 and 47, the refinery must determine the benzene quantity for each waste steam from each waste management unit according to 40 C.F.R. § 61.355(a).

49. When the waste streams flowing through the Lower Lift Station, Upper Lift Station, CPIs, DNFs, Tank A149 and Tank B121 are counted in the calculation under 40 C.F.R. § 61.355(k), the refinery's uncontrolled benzene quantity is greater than its compliance limit of 6 megagrams (Mg).

**Violations**

50. The refinery's failure to design the cover and all openings of the individual drain system to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as identified in Paragraph 43.a – 43.c, is a violation of 40 C.F.R. § 61.346(a)(1)(i).

51. The refinery's failure to design the cover and all openings of each tank to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as identified in Paragraphs 43.d, 43.e, and 43.m, is a violation of 40 C.F.R. § 61.343(a)(1)(i).

52. The refinery's failure to design the cover and all openings of each of the oil-water separators to operate with no detectable emissions as indicated by an instrument reading of less than 500 ppmv above background, as identified in Paragraphs 43.f – 43.l and 43.n, is a violation of 40 C.F.R. § 61.347(a)(1)(i)(A).

53. The refinery's failure to seal all openings in the wastewater treatment system, as identified in Paragraph 43.j, is a violation of 40 C.F.R. § 61.348(e).

54. The refinery's failure to maintain the gaskets on the bleeder vents of Tank A149 is a violation of 40 C.F.R. §§ 60.112b(a)(2)(ii) and 61.351(a)(2).

55. The refinery's failure to monitor each of the seams on the DNF covers is a violation of 40 C.F.R. § 61.343(a)(1)(i).

56. The refinery's failure to have an uncontrolled benzene quantity less than 6 Mg is a violation of 40 C.F.R. § 61.342(e)(2).

9/29/19
Date

George T. Czerniak
Director
Air and Radiation Division

**CERTIFICATE OF MAILING**

I, Loretta Shaffer, certify that I sent a Finding of Violation, No. EPA-5-14-IL-25, by Certified Mail, Return Receipt Requested, to:

Brian Wulf
Director, Environmental
Wood River Refinery
900 South Central Avenue
Roxana, IL 62084

I also certify that I sent a copy of the Finding of Violation by first-class mail to:

Eric Jones, Manager
Compliance Unit
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, IL 62702

Donna Carvalho
Senior Counsel
Legal
8115 Pinnacle
3010 Briarpark Drive
Houston, TX 77042

On the 1 day of October 2014.

CERTIFIED MAIL RECEIPT NUMBER: Loretta Shaffer

7009 1680 0000 7672 9178

Loretta Shaffer, Administrative Program Assistant
Planning and Administration Section